PILOT-SCALE UNDERGROUND STORAGE FACILITY APPLICATION PROCESS

I. INTRODUCTION

To facilitate testing of potential new underground storage facility ("USF") sites, ADWR has developed a policy for expediting the permit review process for projects with small volumes and durations, or pilot-scale USFs, under limited conditions. The intent of this policy is to allow USF permit applicants to obtain permits relatively quickly that allow them to test a recharge site and to gather the data necessary to apply for a permit for a full-scale facility. However, there is no recognition in the Underground Water Storage, Savings and Replenishment statutes that any facility may be permitted without meeting all criteria for a USF permit or without public notice of the applications, as prescribed in A.R.S. Title 45, Chapter 3.1. Therefore, this policy defines the evidence that must be presented in an application and the specific criteria under which a permit may be issued through an expedited application review process that meets all of the statutory requirements for issuance of a USF permit..

II. PILOT PROGRAM OVERVIEW

Because the purpose of the pilot-scale USF is to gather the data necessary for a full-scale facility, the applicant should, at the outset of the design of the pilot-scale facility, consider how those data will be collected. The pilot-scale project must be designed and operated to meet the following objectives, as applicable:

- collection, measurement and characterization of field parameters, including infiltration rates
- collection of data to determine aquifer parameters
- collection of information necessary to assess the adequacy of the water measurement methodology and devices used
- collection of information necessary to assess the adequacy of the water level monitoring methodology, particularly with regard to water level responses to water storage and effects of perching layers on water storage and water levels
- collection of information necessary to assess the water quality with regard to both ambient groundwater quality and impacts on the aquifer of water storage
- collection of information necessary to assess the hydrologic feasibility and potential unreasonable harm of water storage at the levels being considered for a full-scale USF
- collection of information necessary to assess the adequacy of the maintenance plan used at the pilot-scale USF

In order to qualify for review under the pilot process, the applicant must contact the Recharge Coordinator to schedule a meeting with Department staff prior to submitting applications. This meeting is intended to ensure that the proposed project meets the conditions and requirements of a pilot-scale project and to discuss the monitoring and data collection objectives needed to obtain a permit for a full-scale USF.

For pilot-scale project applications, the Department's goal is to finish review of the applications within 45 days of receipt and to issue the permits within 75 days of determining the applications to be complete and correct.[1] However, the applications are subject to public notice under A.R.S. § 45-871.01 after they are found to be complete and correct, and submittal of objections may prevent issuance within this timeframe goal.

The Department intends to permit pilot-scale applicants to operate small volume, limited-duration projects, as described in Section III of this policy, with the goal of collecting data necessary to apply for a full-scale permit, and the Department intends to limit substantially its review of pilot-scale permit applications. Therefore, an applicant for a pilot-scale permit must agree in the application that the permit shall not be renewed and that the filing of an application for a full-scale permit for the facility shall not extend the duration of the pilot-scale permit beyond its expiration date, notwithstanding A.R.S. 41-1092.11(A).

III. CONDITIONS AND LIMITATIONS FOR APPLICATIONS REVIEWED UNDER THE PILOT-SCALE USF PROCESS

A proposed pilot-scale facility must comply with the following conditions and limitations in order for it to be reviewed under the pilot-scale USF process. Any proposed facility that does not meet all of these conditions and limitations must be reviewed under the standard USF application process. For purposes of determining, under this section, whether conditions, structures and/or activities exist within a specified distance from the facility, distance is calculated as the radius drawn from the edge of the individual basin, stream channel, or well. If the site contains multiple basins or wells, individual radii are drawn around each feature.

1. The applicant attended a pre-application meeting with ADWR staff.
2. The proposed facility is a constructed USF.
3. The USF will add water to an aquifer. This condition will be met if an aquifer[2] exists below the USF and the current static water levels within 1000 feet of the site do not exceed 400 feet below land surface. Please note that failure to meet the requirements of this test does not necessarily mean that the proposed USF will not add water to an aquifer, only that the application does not qualify to be reviewed under the pilot-scale USF process.

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[1] Potential applicants should note that although the Department will strive to achieve the goals set forth in this paper, there may be factors that prevent the Department from meeting the goals for a particular application. Potential applicants should also note that the goals set forth in this paper are not time frames for purposes of A.R.S. Title 41, Chapter 6, Article 7.1. The legal timeframes for issuance of a USF permit are set forth in A.R.S. § 45-871.01. Those time frames, which apply to all USF permit applications, including applications for pilot-scale projects, are longer than the goals set forth in this paper. Applicants should further note that issuance of a USF permit also requires a finding by the Director of Environmental Quality. *See* A.R.S. § 45-811.01(C)(5). The statement of policy in this paper is the policy of the Department of Water Resources and is not binding on the Department of Environmental Quality.

[2] Pursuant to A.R.S. § 45-802.01(1), "aquifer" means a geologic formation that contains sufficient saturated material to be capable of storing water and transmitting water in usable quantities to a well. If water will **not** be added to an aquifer, for instance because of excessive depth to groundwater at the site, no USF permit is required. Water discharged without a USF permit is not recoverable and may not generate a long-term storage credit.

4. Current static water levels throughout the area within 1000 feet of the site of the USF are at least 50 feet below land surface.
5. If current static water levels within 1000 feet of the site of the USF are:
   - between 50.0 and 74.9 feet below land surface, the total volume of water to be stored over the duration of the permits does not exceed 5,000 acre-feet;
   - between 75.0 and 99.9 feet below land surface, the total volume of water to be stored over the duration of the permits does not exceed 7,500 acre-feet;
   - 100 feet or more below land surface, the total volume of water to be stored over the duration of the permits does not exceed 10,000 acre-feet.
6. The requested permit duration does not exceed two years from the start of water storage at the USF or five years from the date of permit issuance, whichever is earlier.
7. The USF must be monitored with at least two monitor wells and two piezometers of appropriate depth and construction for the conditions at the USF site**.** The monitor wells and the piezometers must be located within 1000 feet of the USF. At least one monitor well and one piezometer must be located up gradient of the USF. At least one monitor well and one piezometer must be located down gradient of the USF. Except that, if the drilling logs for the two monitor wells present no evidence of perching conditions or fine-grained materials, no piezometers need be installed.
8. The USF is not located within 1000 feet of a septic system, wastewater treatment facility, basement, cemetery, or subsurface structure.
9. The USF is not located within one-half mile of any of the following sites of potential water quality impact:
   - a hazardous waste landfill
   - a sanitary landfill
   - a site listed on the National Priority List under CERCLA
   - a site listed on the WQARF site registry
   - a listed Leaking Underground Storage Tank site
   - a site addressed by the Voluntary Remediation Program
   - a site being addressed by a RCRA Corrective Action
   - a known location of a hazardous substance disposal.
10. The USF is not located within one-half mile of any mining or sand and gravel facility.
11. The USF is not located within one mile of any other permitted USF.

IV. APPLICATION REQUIREMENTS FOR A PILOT-SCALE USF

In order to undertake a pilot-scale project, the applicant must submit an application for a permit for a pilot-scale project, submit an application for a water storage permit, and pay all fees required by A.A.C. R12-15-151. The application for the USF permit must include all of the evidence and documentation listed in this section. If any of the evidence or documentation is missing from the original submittal of the application, the Department will notify the applicant by phone of the deficiency. The applicant will have ten business days to supply the missing information. If the applicant fails to supply the information within that time, the application will proceed under the normal, non-expedited, application process.

The following list contains the evidence required to demonstrate that an application for a pilot-scale facility meets the requirements of A.R.S. § 45-811.01 for issuance of a USF permit:

1. A narrative description of the facility, including all recharge methodologies and cadastral locations of facility components**.** The applicant must also submit schematics of the USF design (*e.g.* recharge wells, basins, trenches, or other recharge methods), monitor wells, and piezometers.
2. A map depicting all facility components, including monitoring locations, and Township, Range and Sections lines.
3. A monitoring plan that includes monthly measurements of water levels; monthly calculation of infiltration rates and annual evaporation rates (if applicable); and, if the project will not be governed by an aquifer protection permit, quarterly water quality sampling.
4. A summary of the localized geology and groundwater systems in the area of the proposed site using existing data, including all of the following:
   - a description of any known perching layers
   - depth to water/ elevations of the water table
   - water elevation map with general flow direction of the groundwater
   - hydrographs reflecting groundwater level trends
   - ownership, location, and use of any wells within one-half mile of the site
   - references of reports used to prepare the summary of geology
   - assessment and results of a sampling of ambient aquifer water quality, unless an aquifer protection permit will govern the project. The ambient data must include major cations and anions, nitrate, fluoride, and metals with established aquifer water quality standards.
   - Evidence establishing that the USF meets the conditions and limitations listed in section III of this paper.
5. A sworn statement from the chief financial officer of the applicant certifying that, to his or her best knowledge and belief, the applicant possesses existing financial resources or adequate taxing or bonding authority to pay the estimated construction and operation costs for the USF.
6. The name and address of each person who will be principally responsible for overseeing the construction and operation of the USF; proof of any pertinent licenses or certifications held by that person; and a narrative, resume, biography or related information describing the person's professional training and work experience that is relevant to the construction or operation of the USF.
7. Affirmation by the applicant that any required floodplain use permit will be obtained before beginning construction activities.
8. Evidence of legal access to the site of the proposed USF.

V. PILOT-SCALE USF PERMIT CONDITIONS

All USF permits issued under the pilot-scale permit process will contain the following permit conditions:

1. If the water to be stored is effluent, water storage will not begin at the USF until the applicant obtains an aquifer protection permit from the Arizona Department of Environmental Quality.

2. If the water to be stored is not governed by an aquifer protection permit, the water will not exceed any aquifer water quality standard or surface water quality standard, if applicable. Except that if the water is not to be delivered directly to the saturated zone, the water may exceed aquifer water quality standards for turbidity and bacteria.
3. If water levels rise above an Alert Level[3] of 30 feet below land surface at any piezometer or monitor well location, the frequency of water level measurements must increase to weekly. If water levels recede to at least 30 feet below land surface for two consecutive weekly measurements, the frequency of water level measurements will return to monthly.
4. All storage activities must cease if water levels rise above an Operational Prohibition Limit[4] (OPL) of 20 feet below land surface at any piezometer or monitor well location. Within 30 days of exceeding the OPL a report must be prepared and submitted to the Department. The report, at a minimum, must include an analysis of the cause of the OPL exceedance and any unreasonable harm to surrounding land and water users caused by the exceedance. If recharge activities are to resume, the report must also include a revised operation and monitoring plan to prevent any future exceedance of the OPL. If recharge operations resume and the OPL of 20 feet below land surface at any piezometer or monitor well location is exceeded for a second time, all recharge activities associated with the pilot permit must cease and may not resume without further approval from the Department.
5. All storage activities must cease if the storage causes unreasonable harm to surrounding land or water users[5].
6. Water inflow and outflow at the USF must be measured in accordance with A.A.C. R12-15-901 through 909.
7. The applicant must make quarterly and annual reports to ADWR of all information collected at the USF.
8. If a recharge basin is used to store the water, the method described in "Evaporation from Open Water Surfaces in Arizona" by Keith R. Cooley (1970) must be used to calculate evaporative losses.

[3] The Alert Level (AL) is an indicator that an initial response action is required to avoid the potential for unreasonable harm. If an AL is reached or if negative impacts are observed, the course of action developed and submitted by the applicant will be implemented to prevent water levels from reaching or exceeding the second tier of the monitoring plan.

[4] The Operational Prohibition Limit (OPL) is the level above which the potential for unreasonable harm exists.

[5] "Unreasonable harm" will be evaluated in accordance with the narrative provisions set forth in ADWR Substantive Policy Statement R5 "Underground Water Storage Permit Application Guidance – Technical and Financial Capability and Unreasonable Harm and Hydrologic Feasibility," effective December 10, 2002.